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Reducing Clostridium Difficile

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Nursing 653: Internship Clinical Nurse Leadership

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Clinical Leadership Theme

This project focuses on the CNL curriculum element of *Clinical Outcomes Management*. The CNL role function is Clinician. As the CNL, I design, coordinate and evaluate care in a timely manner and cost effective manner while utilizing the available resources. I will be assessing hand washing compliance and use of personal protective equipment during the process to eliminate the number of Clostridium Difficile Infection (CDI).

Statement of the Problem

In the United States 1 in 25 hospitals have at least one healthcare-associated infection (HAI) in any given day approximately 722,000 HAIs occurred in 2011 in acute care hospitals (CDC, 2015). Pneumonia was the top leading HAI, next to gastrointestinal illnesses (including CDI) (CDC, 2015). According to the Centers for Disease Control and Prevention (2015), 359 Texas hospitals reported CDI in 2013. Hickson (2011) estimated the latest cost of CDI in U.S \$3.2 billion. CDI leads to increase diagnostic procedures, prolong hospital stays, and increase medical cost (Elseviers et al., 2015). Approximately 1 in 11 patients above 65 years old have died within a month of CDI diagnosis (CDI, 2015). The purpose of my CNL project is to reduce the number of CDI cases by identifying effective solutions.

Project overview

To reduce the number of reported CDI at my organization, in a large acute hospital in West Texas, I will create simple, large and friendly handwashing reminders posters to be posted throughout my organization upon approval. The poster will include single steps on how to properly wash hands and the importance of handwashing. I am always planning on working with other healthcare professionals to create a handwashing compliance team (infection control professionals, nursing clinical managers, nursing team leaders) to monitor proper handwashing

steps, to monitor the frequency of personal protective equipment in suspected and identified CDI rooms, and to monitor the frequency of handwashing. By December 31, 2015, my organization will reduce the number of reported C.diff laboratory identified events by 20%.

Rationale

To identify the needs and aspects leading to the project, unit data and audits were utilized. According to the data, 68 C. diff laboratory identified events result to a standardized infection ration (SIR) of 1.427, which is worse than the National Benchmark (“Hospital Profile,” n.d.). The average cost of a CDI is approximately \$29,000 with an additional 12 hospital length stays (Lipp, Nero & Callahan, 2012). Upon approval, the projected cost (Appendix A) for large colored poster by a local printing establishment is approximately \$20.00 per poster. For an 8 bed unit, one poster is required for each room, and 2 additional posters will be posted in the nursing station and by the nursing handwashing station. My projected cost for a total 10 posters will be approximately \$200.00. The hourly wage for a nursing team leader, nursing clinical manager and infection control employee varies, and the number of employees involved in the project may vary. The approximate hourly wages are anywhere between \$23.00 to \$50.00 (depending on employee title), and for 1-2 hours per day costing \$8,280 to \$36,000 per employee annually. A SWOT analysis (Appendix B) was completed earlier in semester. This document highlights the potential strengths and weaknesses of this CNL project, as well as opportunities to address the weaknesses.

Methodology

For this CNL project, I will utilize Lewis’s Stages of Change theory. Lewis’s Stages of Change discusses three different stages; unfreezing, moving and refreezing. The first stage, unfreezing is an important stage since it focuses on the problem, and promotes awareness.

Change is consistent in healthcare, and I must prepare staff for the change by clearly focusing on developing problem awareness by educating healthcare employees on the number of CDI reported, cost, and consequences, while reducing factors that maintain the status quo. The second stage, moving, will help assist change since it will focus on the identified problems, goals and objectives of my project. During this process, I will ensure healthcare employees are to be congratulated and celebrated for their short-wins in order to continue to facilitate change, and the objectives. The third stage, refreezing is an important stage since it will ensure change is permanent and prevent re-occurrence. Lewis' Stages of Change theory will provide me with guidance as to how I should approach change. There are multiple external factors that will affect change, but Lewis' Stages of Change theory is approximate for this project since it will easily provide guidance, required changed and revert from previous methods.

For this CNL project, I will continue to utilize unit data and audits to evaluate effectiveness. The handwashing team will utilize a standard unit data to monitor compliance. Initially I will assess the first standard unit data collected by the handwashing team for baseline, and continuously monitor results biweekly. I predict the first results will demonstrate poor compliance, but with the assistance of a handwashing team, results will demonstrate excellent compliance slowly.

Data Source/Literature Review

My PICO statement, Patient/Population: Patients with CDI Intervention: Implement strict handwashing measures and usage of bleach wipes, Comparison: Alcohol gel wash and usage of non-bleach wipes, and Outcome: Reduce CDI assisted me with several literature reviews. There are several literatures discussing and supporting the importance and significance of proper handwashing and CDI. A successful study in the United Kingdom promotes the implementation

of evidenced-based practices such as environmental decontamination, hand hygiene (hand washing with soap), isolation, use of personal protective equipment, and strict antibiotic usage has reduced the number of CDI (Gouliouris et al., 2011, p. 78). Gouliouris et al. (2011) and Jou et al. (2015), and Pokrywka et al. (2014) both supports hand hygiene consisting of water and soap will eliminate CDI spores, and transmission from one patient to another. Another literature review, acknowledges CDI increases the average length of stay from 2.8 days to 5.5 days, costing approximately \$3,006 to \$15,397 per CDI episode (Dubberke et al., 2014). The recommended CDI prevention is consistent with other literature reviews, proper hand hygiene before and after patient contact, and use of personal protective equipment (gloves and gown) (Dubberke et al., 2014). In a literature review, “Effectiveness of Hand Hygiene for Removal of Clostridium difficile Spores from Hands” Edmonds et al. (2014), research demonstrated handwashing with soap and water versus alcohol based gels is significantly efficacious in eliminating the C.diff spores, and recognizes healthcare professionals are the primary source of transmission of CDI. A majority of literature review supports handwashing with water and soap, and does not recommend alcohol based gels. Nerandzic et al. (2015) tested the efficacy of handwashing with soap and water for 30 seconds and the efficacy of alcohol based solutions. Handwashing with water and soap reduced the number of positive C.diff spores, and alcohol based solution did not. Alcohol based solutions are unsuccessful because they’re unable to access sites of action in C.diff spore core.

Timeline

This project began in late August 2015, and will conclude in December 2015. Refer to Appendix C for a detailed timeline.

Expected Results

For this CNL project, I expect some resistance to change. I am expecting some noncompliance initially; however with the Lewis' Change Theory I will be able to successfully promote positive and optimistic attitude of the necessary change. I expect this may be an ongoing project, and may require other interventions or modifications if results are unsuccessful. By the end of December 2015, I expect a 20% reduction of CDI.

Nursing Relevance

Reducing CDI by successfully complying with proper hand hygiene and utilizing protective equipment will reduce the number of HAI, eliminate the administration of preventable antibiotics, prevent increase length of stay associated with CDI, and increase patient safety. Whenever a CDI has been identified, it appears that nurses are one of the healthcare professionals responsible and accountable for the HAI. Healthcare professionals, including nurses are the primary mode of transmission of C.diff spores. By reinforcing the chain of infection and complying with hand hygiene nurses are demonstrating patient safety and actively taking a role in preventing CDI deaths, and CDI reoccurrence.

Summary Report

My CNL project aims to reduce the number of HAI, specifically C.diff laboratory events by 20% by December 2015. My CNL project focuses in an eight unit bed, designated for medically ill geriatric patients. A majority of the patients are from West Texas living with multiple comorbidities (e.g. diabetes, hypertension, and hyperlipidemia) that will be either discharge to long-term acute care, rehabilitation facility, skilled nursing care, independent living homes, or home with home health. Although a majority of the geriatric patients require frequent and

maximum assistance with activities of daily living and medication management, a substantial of the geriatric patients are independent and require minimal assistance.

A total of 68 CDI laboratory events have been identified from previous reports for the entire organization. Prior to initiating my CNL project, an estimated of a total of five CDI was identified in September 2015 for my unit (Appendix D). Since implementation, October 2015 a total of two CDI was identified, and November 2015 no CDI was identified. Initiating hand hygiene posters, posting proper protective equipment memos on CDI patient's rooms, discussing with staff the importance of hand hygiene and educating patients the benefits of practicing hand hygiene upon admission has reduce the number of reported CDI.

After successfully completing my CNL project, sustaining the plan is a priority. After assessing and evaluating my CNL project, discussing what successfully worked, and discussing what parts require modification is an important step. With any project, it's imperative to be accepting of change, and understand specific plans may not occur as envisioned. Modifying the plan gradually is important to sustain the project. Support from stakeholders, especially clinical managers is necessary because without support the project can certainly fail. Clinical managers and a unit champion can diligently influence perspective employees and share the objective/goal of the project. Most importantly, persistently communicating the benefits and rationale of the project with current employees can help endure the project, so current employees can comprehend the significance of the project.

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Appendix A

SWOT ANALYSIS**Strengths**

- Microsystem
- Accessible policies and procedures
- Laboratory department C.diff results are quickly posted on the patient's chart. If results are positive for C.diff, laboratory is required to notify the nurse via phone followed by documentation that results were reported to the nurse. Results are quickly and effectively communicated.
- Pharmacy department quickly reviews antibiotics, and reviews stop dates and duration of specific antibiotics which helps reduce long duration of antibiotic usage.
- After patient discharge, environmental services are informed if they room was isolated and if it requires specialized cleaning.

Weaknesses

- Isolation carts not delivered in timely manner
- Bleach wipes are not stocked in a patient's room, and non-bleach wipes are still in a patient's room and may be used by healthcare professionals.
- Use of alcohol gel based solutions
- Patients and family uneducated about the significance of strict handwashing

Opportunities

- Collaborating with different departments to help deliver isolation carts in a timely manner, and ensure proper isolation protocols are initiated. For example, the use of bleach wipes instead of non-bleach wipes, and handwashing instead of alcohol based solutions which are critical interventions that have shown to reduce the spread of C.diff (Banning, 2008, p. 38).
- Monitor the number of healthcare employees' handwashing instead of utilizing alcohol based solutions or monitor if rooms contain bleach wipes.

Threats

- Noncompliance
- Resistant to change. For example, central supply may not comply with efficient delivering isolation carts or nurses may not comply with proper handwashing.

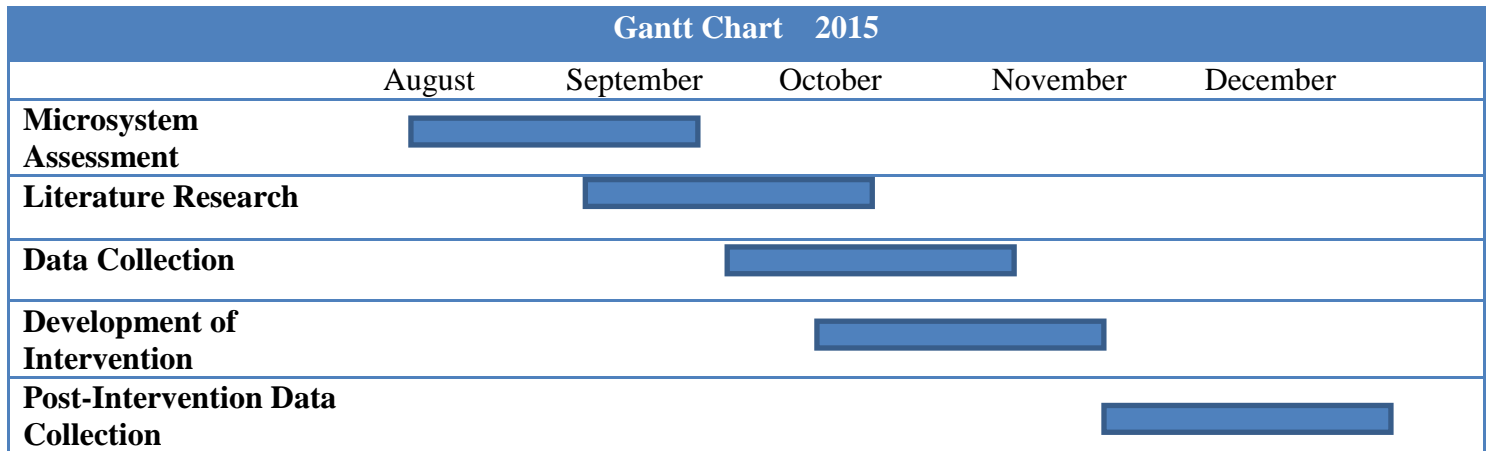
Appendix B

PROJECTED COST ANALYSIS

Projected Cost Analysis				
Large Colored Posters	Approximately \$20.00 per poster	Approximately Requiring 10 posters	Approximate cost \$200.00	Approximate cost per year \$200.00
Hourly wage for healthcare employees to participate in project to monitor handwashing and personal protective equipment compliance	Approximately \$23.00 to \$50.00	Approximately 1-2 hours per day	Approximate cost \$23.00 to \$100.00 per day per employee	Approximate cost per year \$8,280.00 to \$36,000.00 per employee

Appendix C

GANTT CHART



Appendix D

RESULTS

